Fig.1

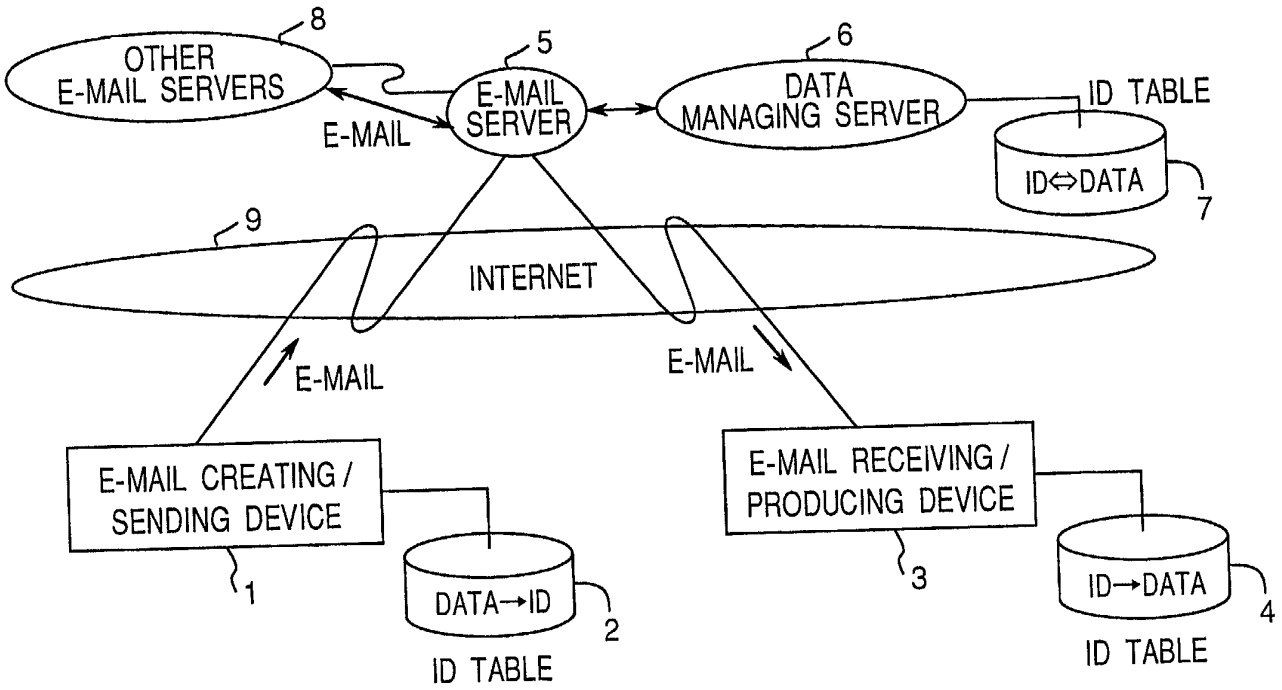

8
OTHER
E-MAIL SERVERS
5
E-MAIL
SERVER
6
DATA
MANAGING SERVER
ID TABLE
ID⇔DATA
7
E-MAIL
9
INTERNET
E-MAIL
E-MAIL
E-MAIL CREATING /
SENDING DEVICE
1
DATA→ID
2
ID TABLE
E-MAIL RECEIVING /
PRODUCING DEVICE
3
ID→DATA
4
ID TABLE

Fig.2

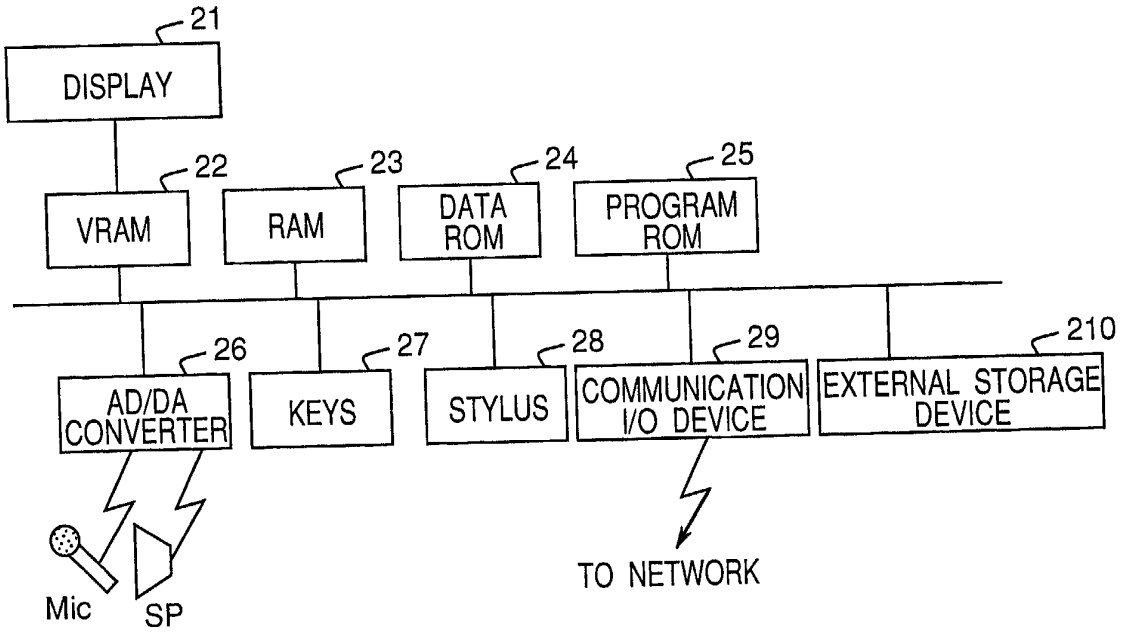

21
DISPLAY
22
VRAM
23
RAM
24
DATA ROM
25
PROGRAM ROM
26
AD/DA CONVERTER
27
KEYS
28
STYLUS
29
COMMUNICATION I/O DEVICE
210
EXTERNAL STORAGE DEVICE
Mic
SP
TO NETWORK

Fig.3

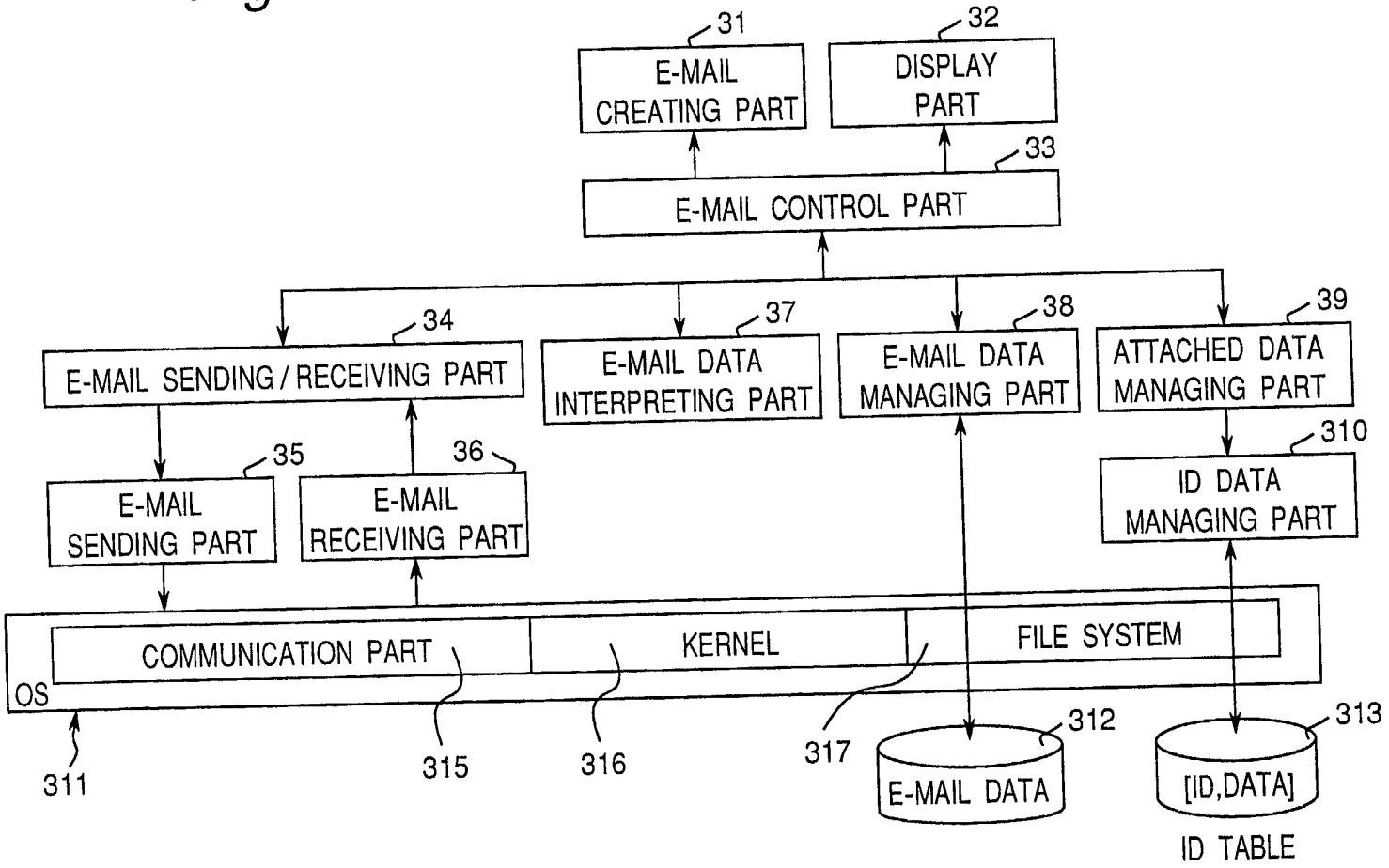

31
E-MAIL CREATING PART
32
DISPLAY PART
33
E-MAIL CONTROL PART
34
E-MAIL SENDING / RECEIVING PART
37
E-MAIL DATA INTERPRETING PART
38
E-MAIL DATA MANAGING PART
39
ATTACHED DATA MANAGING PART
35
E-MAIL SENDING PART
36
E-MAIL RECEIVING PART
310
ID DATA MANAGING PART
OS
COMMUNICATION PART
KERNEL
FILE SYSTEM
311
315
316
317
312
E-MAIL DATA
313
[ID,DATA]
ID TABLE

Fig.4

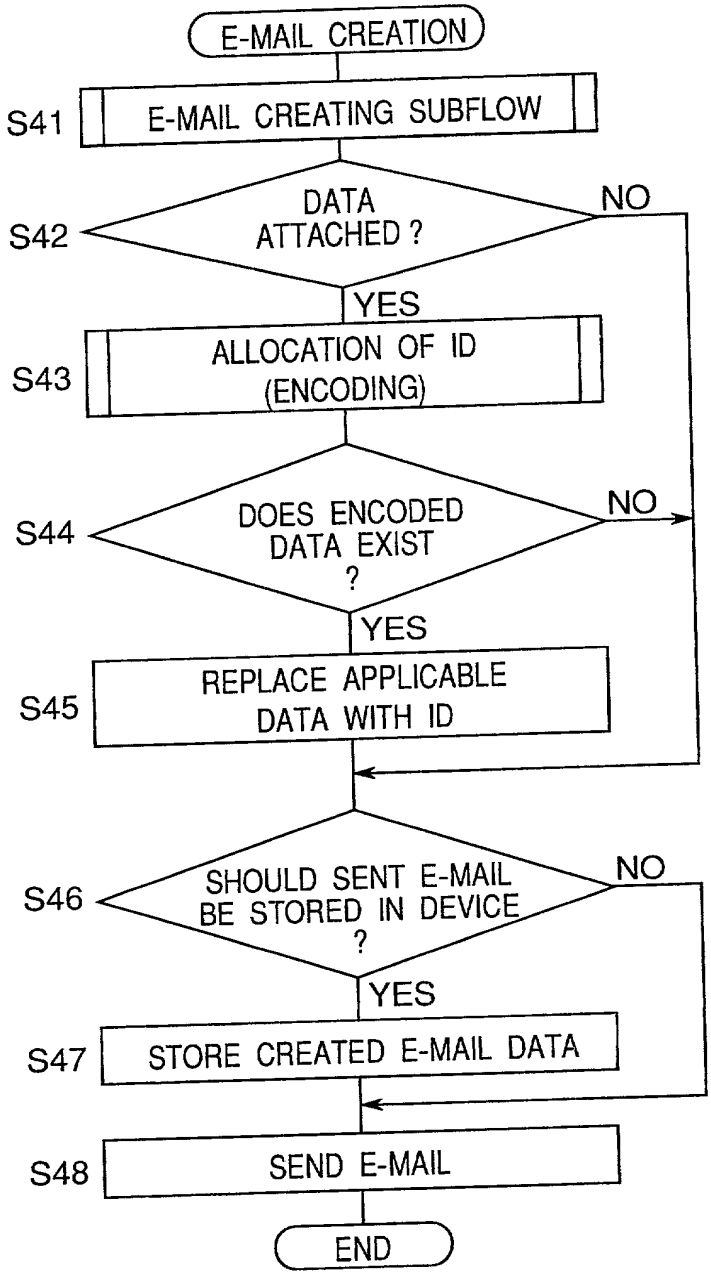

E-MAIL CREATION
S41
E-MAIL CREATING SUBFLOW
S42
DATA ATTACHED ?
NO
YES
S43
ALLOCATION OF ID (ENCODING)
S44
DOES ENCODED DATA EXIST ?
NO
YES
S45
REPLACE APPLICABLE DATA WITH ID
S46
SHOULD SENT E-MAIL BE STORED IN DEVICE ?
NO
YES
S47
STORE CREATED E-MAIL DATA
S48
SEND E-MAIL
END

Fig.5

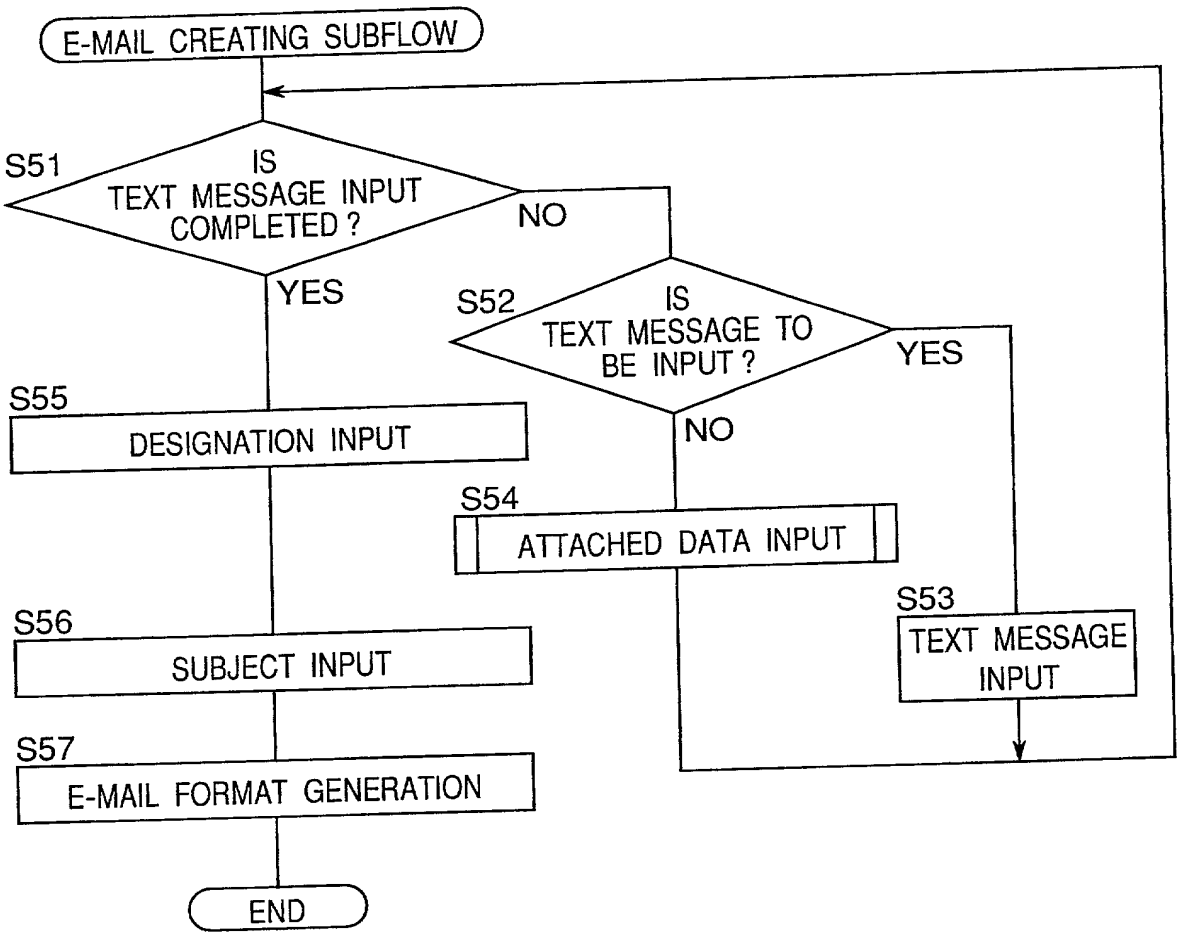

E-MAIL CREATING SUBFLOW
S51
IS TEXT MESSAGE INPUT COMPLETED ?
NO
YES
S52
IS TEXT MESSAGE TO BE INPUT ?
YES
NO
S55
DESIGNATION INPUT
S54
ATTACHED DATA INPUT
S53
TEXT MESSAGE INPUT
S56
SUBJECT INPUT
S57
E-MAIL FORMAT GENERATION
END

Fig.6

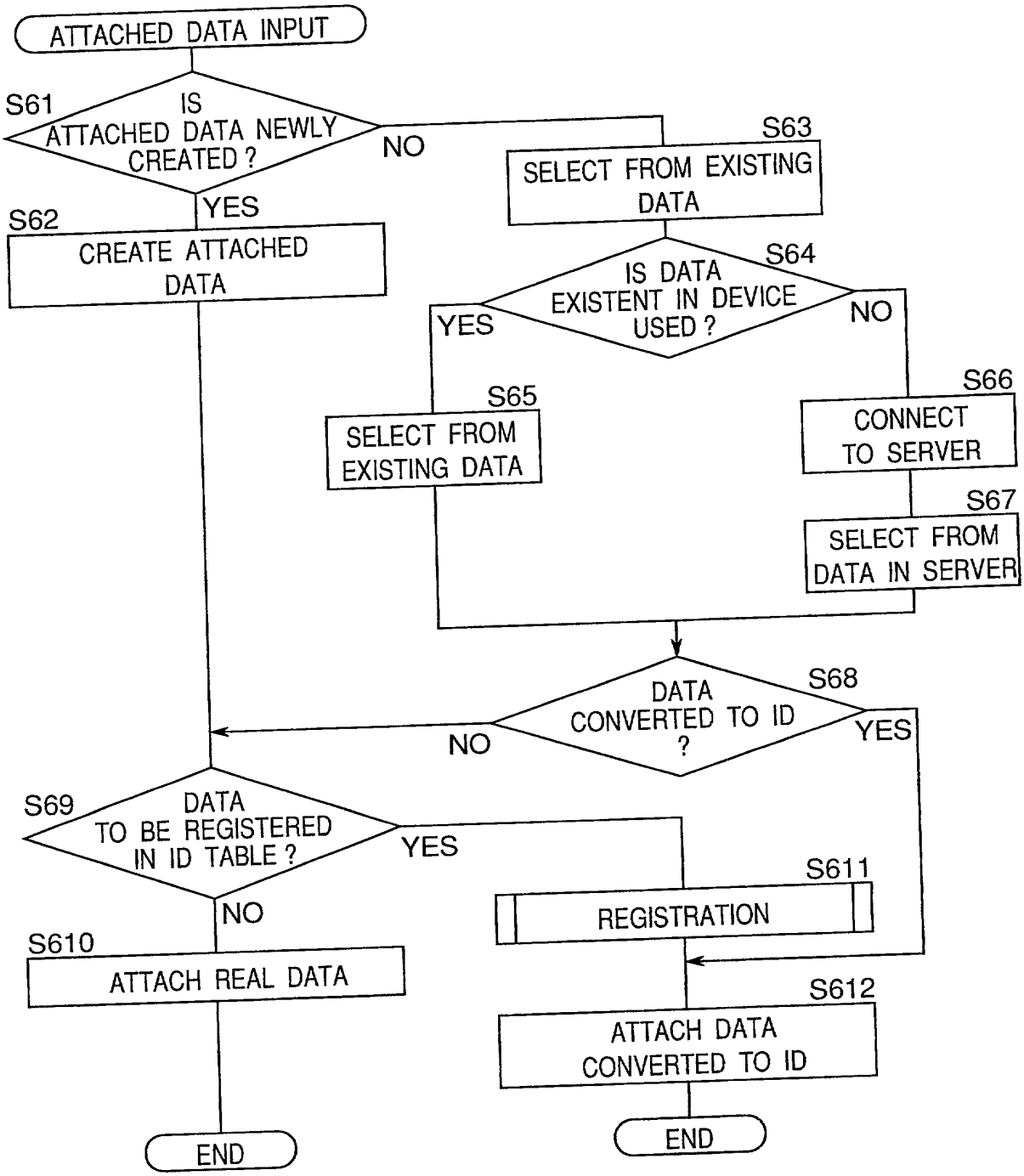

ATTACHED DATA INPUT
S61
IS ATTACHED DATA NEWLY CREATED ?
NO
YES
S62
CREATE ATTACHED DATA
S63
SELECT FROM EXISTING DATA
S64
IS DATA EXISTENT IN DEVICE USED ?
YES
NO
S65
SELECT FROM EXISTING DATA
S66
CONNECT TO SERVER
S67
SELECT FROM DATA IN SERVER
S68
DATA CONVERTED TO ID ?
NO
YES
S69
DATA TO BE REGISTERED IN ID TABLE ?
YES
NO
S610
ATTACH REAL DATA
S611
REGISTRATION
S612
ATTACH DATA CONVERTED TO ID
END
END

Fig.7

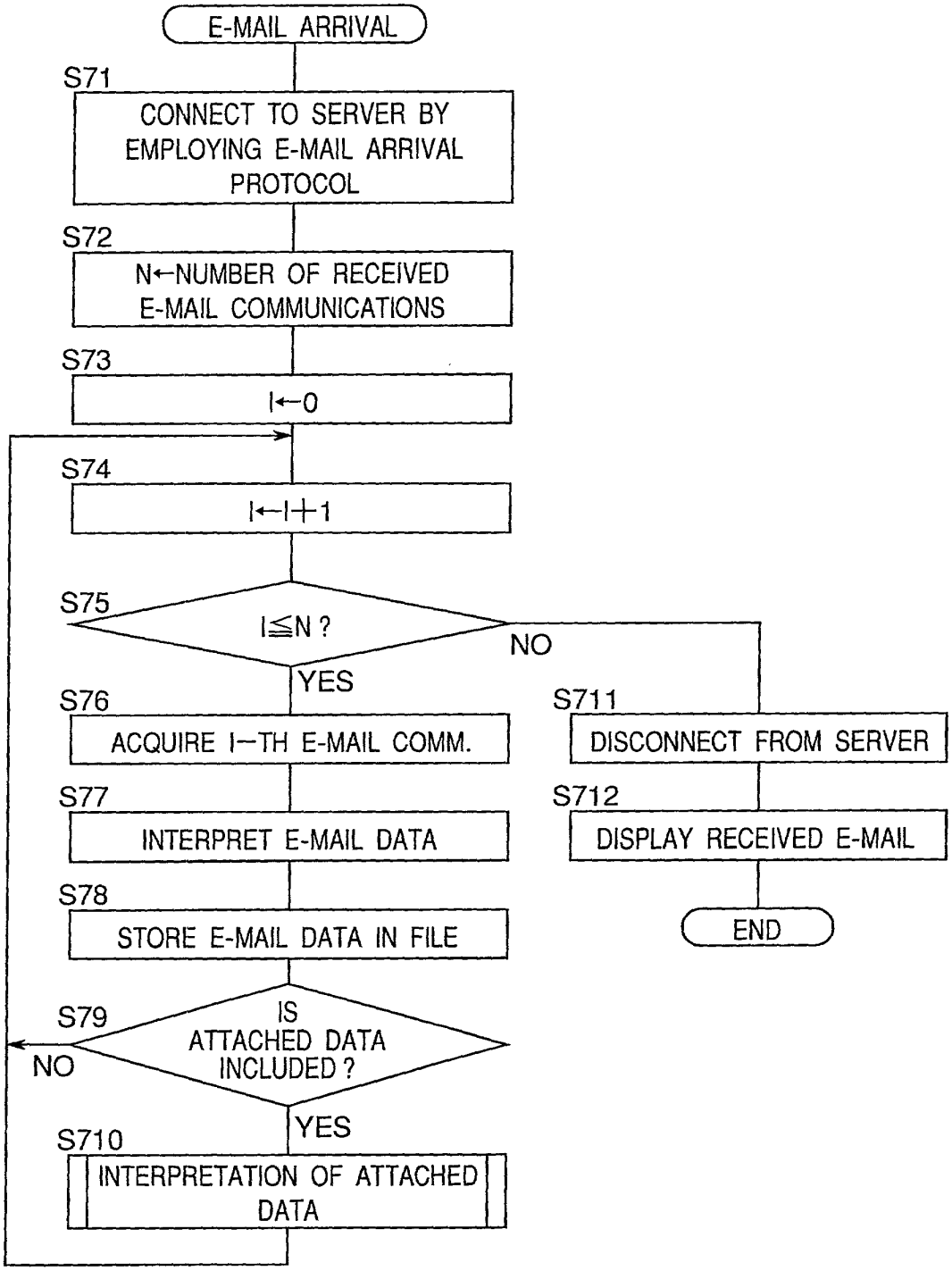

E-MAIL ARRIVAL
S71
CONNECT TO SERVER BY EMPLOYING E-MAIL ARRIVAL PROTOCOL
S72
N←NUMBER OF RECEIVED E-MAIL COMMUNICATIONS
S73
I←0
S74
I←I+1
S75
I≦N ?
NO
YES
S76
ACQUIRE I−TH E-MAIL COMM.
S77
INTERPRET E-MAIL DATA
S78
STORE E-MAIL DATA IN FILE
S79
IS ATTACHED DATA INCLUDED ?
NO
YES
S710
INTERPRETATION OF ATTACHED DATA
S711
DISCONNECT FROM SERVER
S712
DISPLAY RECEIVED E-MAIL
END

Fig.8

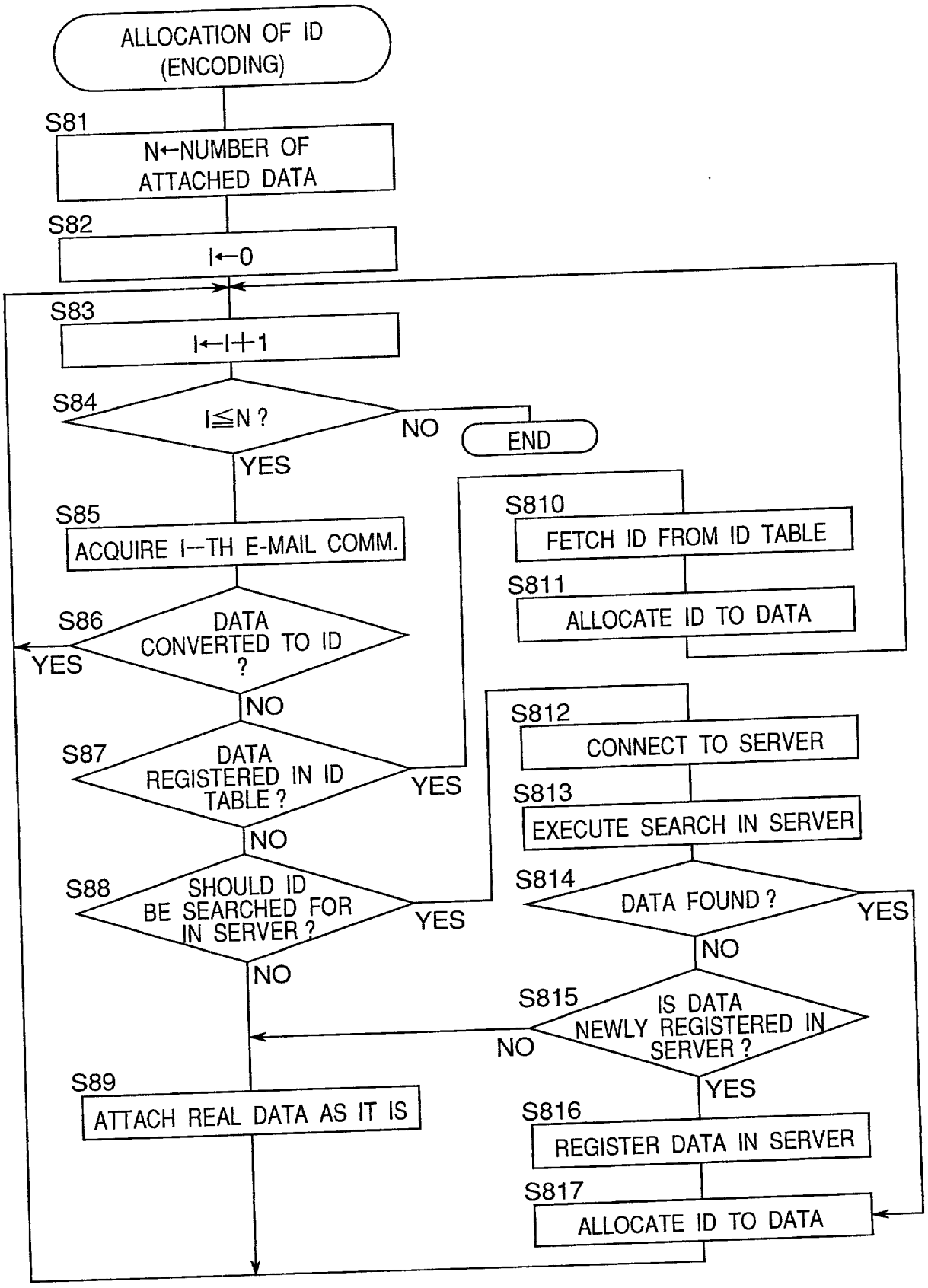

ALLOCATION OF ID (ENCODING)
S81
N←NUMBER OF ATTACHED DATA
S82
I←0
S83
I←I+1
S84
I≦N ?
NO
END
YES
S85
ACQUIRE I--TH E-MAIL COMM.
S86
DATA CONVERTED TO ID ?
YES
NO
S87
DATA REGISTERED IN ID TABLE ?
YES
NO
S88
SHOULD ID BE SEARCHED FOR IN SERVER ?
YES
NO
S89
ATTACH REAL DATA AS IT IS
S810
FETCH ID FROM ID TABLE
S811
ALLOCATE ID TO DATA
S812
CONNECT TO SERVER
S813
EXECUTE SEARCH IN SERVER
S814
DATA FOUND ?
YES
NO
S815
IS DATA NEWLY REGISTERED IN SERVER ?
NO
YES
S816
REGISTER DATA IN SERVER
S817
ALLOCATE ID TO DATA

Fig.9

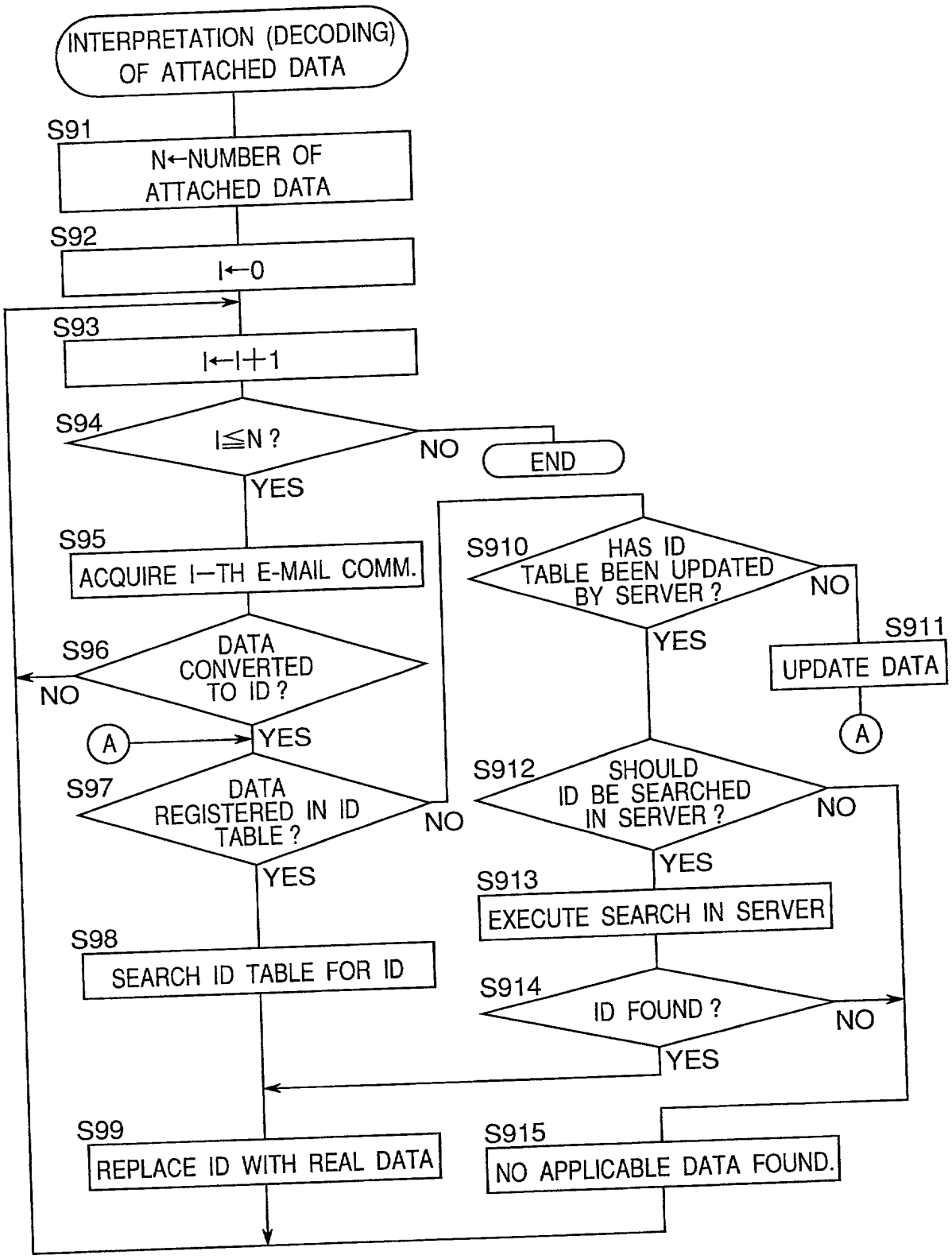

INTERPRETATION (DECODING) OF ATTACHED DATA
S91
N←NUMBER OF ATTACHED DATA
S92
I←0
S93
I←I+1
S94
I≦N ?
NO
END
YES
S95
ACQUIRE I-TH E-MAIL COMM.
S96
DATA CONVERTED TO ID ?
NO
YES
A
S97
DATA REGISTERED IN ID TABLE ?
NO
YES
S98
SEARCH ID TABLE FOR ID
S99
REPLACE ID WITH REAL DATA
S910
HAS ID TABLE BEEN UPDATED BY SERVER ?
NO
YES
S911
UPDATE DATA
A
S912
SHOULD ID BE SEARCHED IN SERVER ?
NO
YES
S913
EXECUTE SEARCH IN SERVER
S914
ID FOUND ?
NO
YES
S915
NO APPLICABLE DATA FOUND.

Fig.10

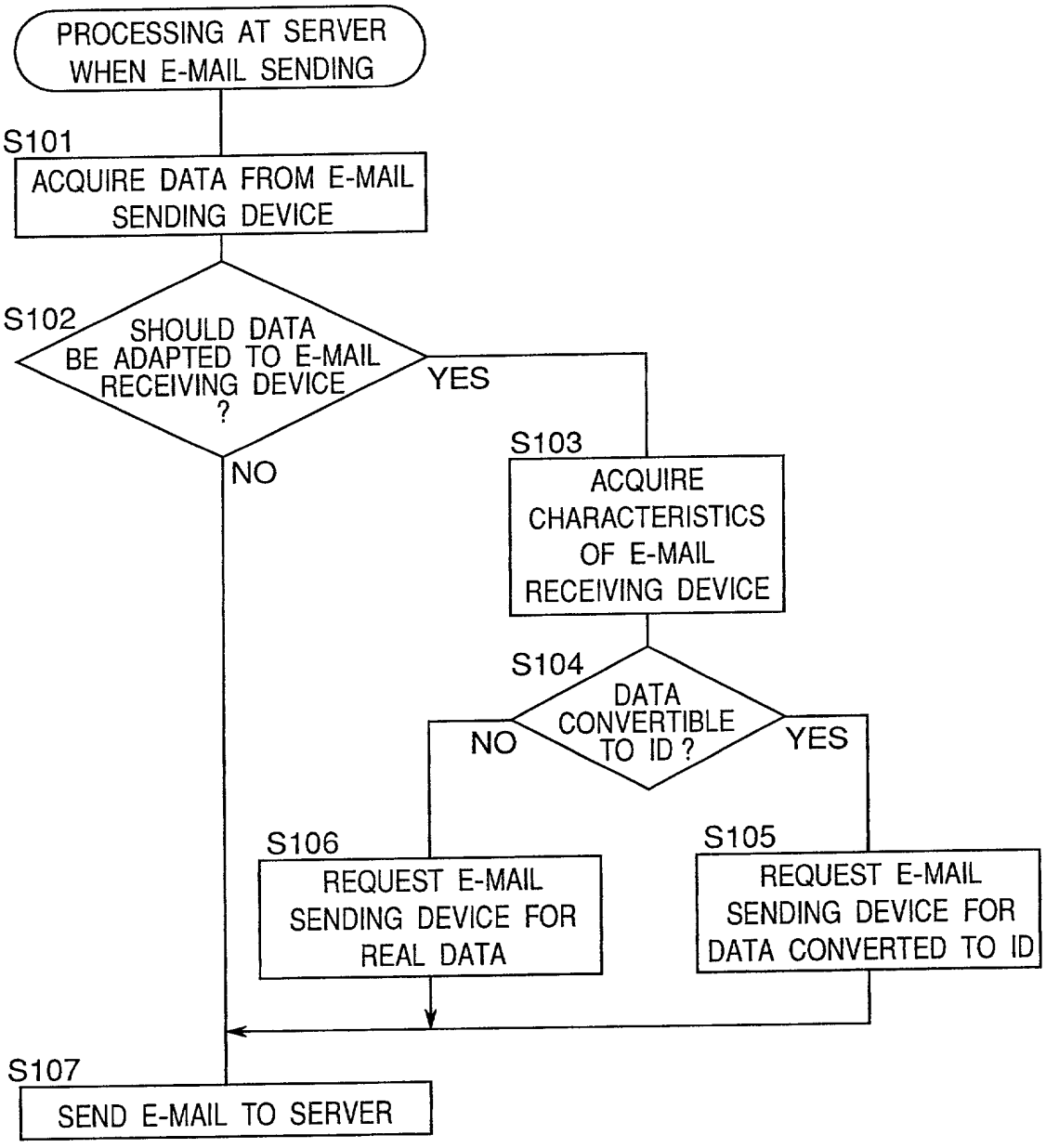

PROCESSING AT SERVER WHEN E-MAIL SENDING
S101
ACQUIRE DATA FROM E-MAIL SENDING DEVICE
S102
SHOULD DATA BE ADAPTED TO E-MAIL RECEIVING DEVICE ?
YES
NO
S103
ACQUIRE CHARACTERISTICS OF E-MAIL RECEIVING DEVICE
S104
DATA CONVERTIBLE TO ID ?
NO
YES
S106
REQUEST E-MAIL SENDING DEVICE FOR REAL DATA
S105
REQUEST E-MAIL SENDING DEVICE FOR DATA CONVERTED TO ID
S107
SEND E-MAIL TO SERVER

Fig.11

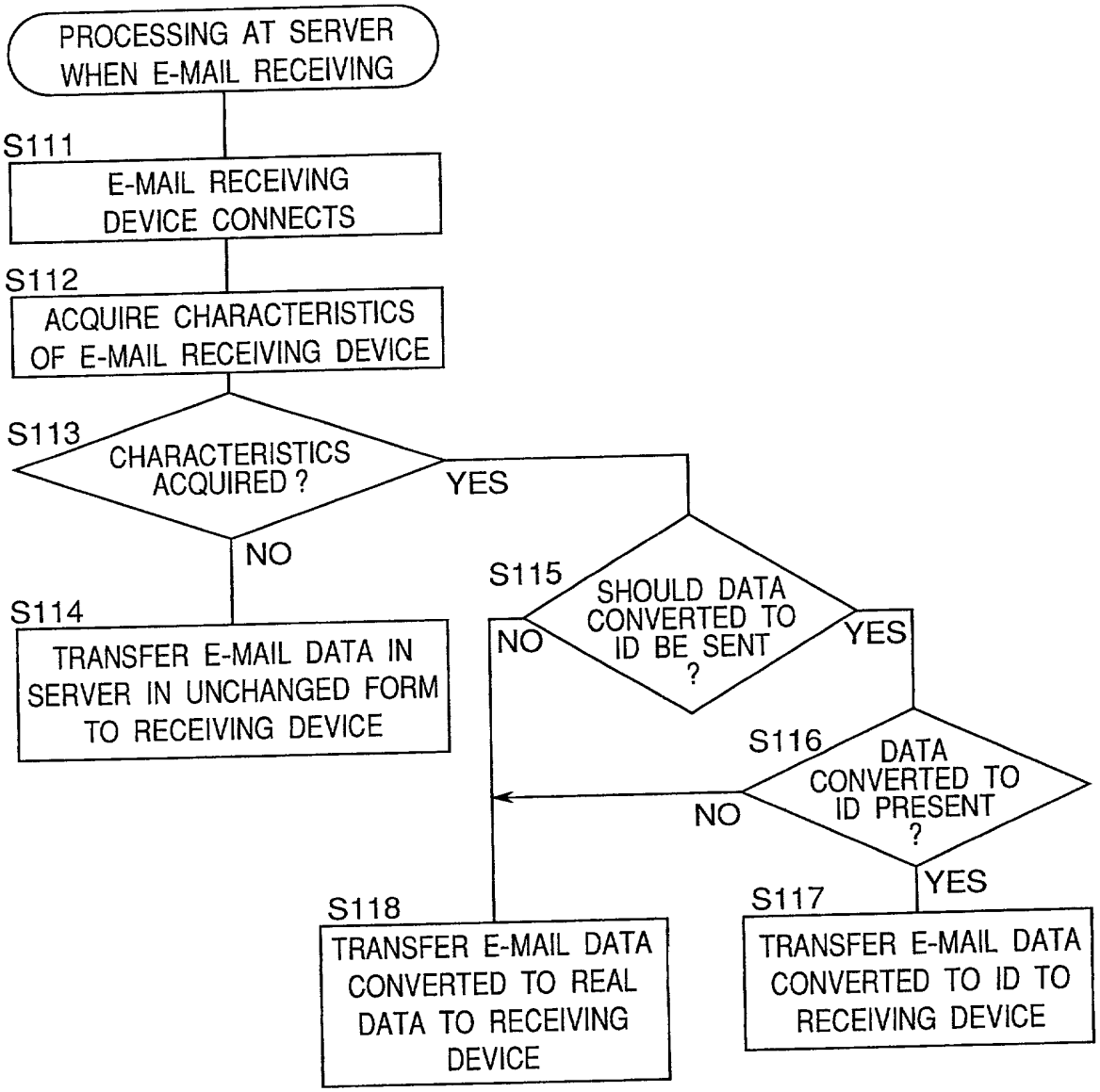
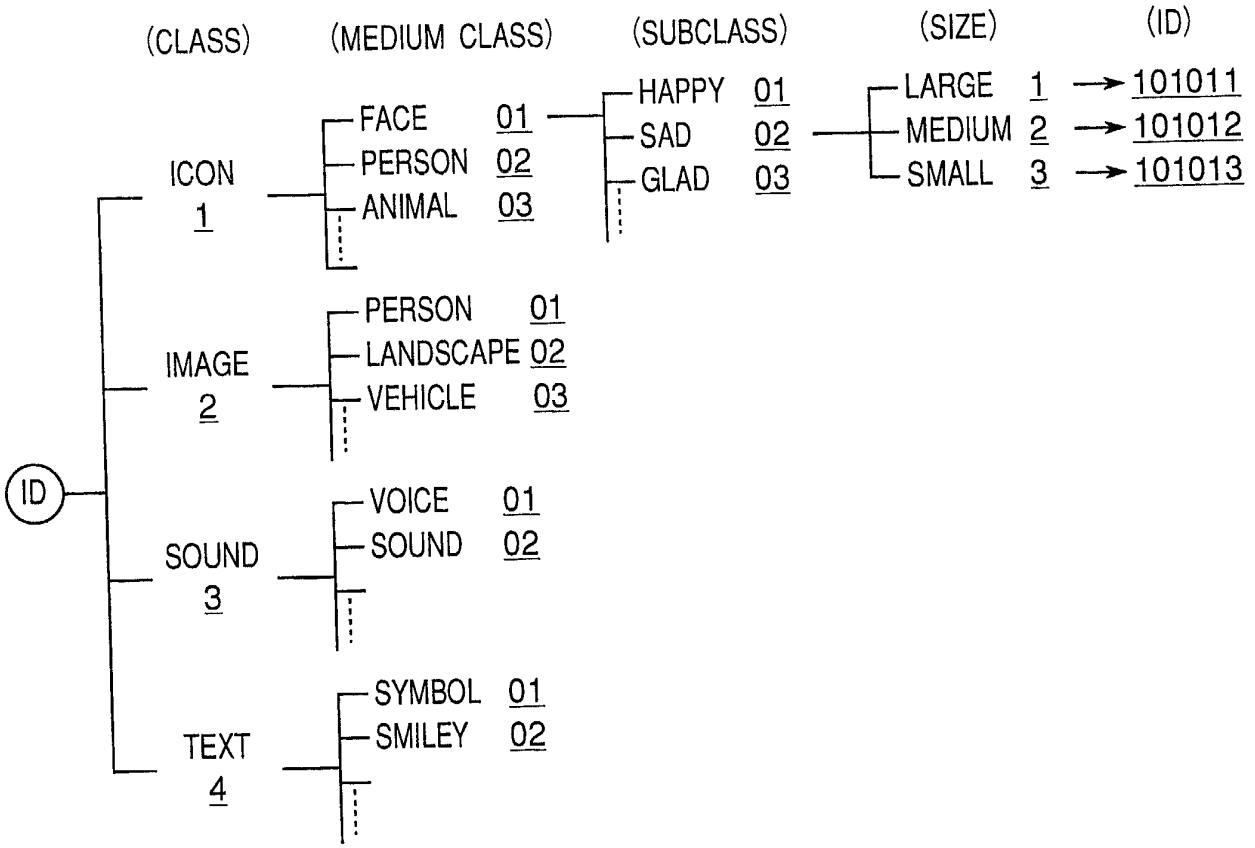

PROCESSING AT SERVER WHEN E-MAIL RECEIVING
S111
E-MAIL RECEIVING DEVICE CONNECTS
S112
ACQUIRE CHARACTERISTICS OF E-MAIL RECEIVING DEVICE
S113
CHARACTERISTICS ACQUIRED ?
YES
NO
S114
TRANSFER E-MAIL DATA IN SERVER IN UNCHANGED FORM TO RECEIVING DEVICE
S115
SHOULD DATA CONVERTED TO ID BE SENT ?
NO
YES
S116
DATA CONVERTED TO ID PRESENT ?
NO
YES
S117
TRANSFER E-MAIL DATA CONVERTED TO ID TO RECEIVING DEVICE
S118
TRANSFER E-MAIL DATA CONVERTED TO REAL DATA TO RECEIVING DEVICE

Fig.12



(A) SIX-DIGIT INTEGER NOTATION

ID= (CLASS : 1 DIGIT)+(MEDIUM CLASS : 2 DIGITS)+(SUBCLASS : 2 DIGITS)+(SIZE : 1 DIGIT)

(B) DIRECTORY NAME NOTATION

ID= (CLASS NAME) / (MEDIUM CLASS NAME) / (SUBCLASS NAME) / (SIZE NAME)

Fig.13

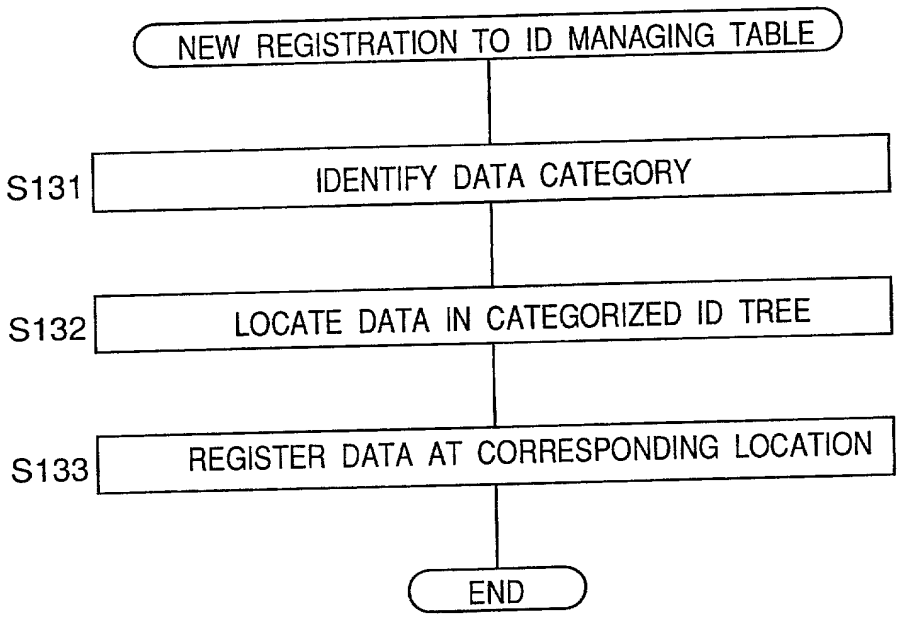

NEW REGISTRATION TO ID MANAGING TABLE
S131
IDENTIFY DATA CATEGORY
S132
LOCATE DATA IN CATEGORIZED ID TREE
S133
REGISTER DATA AT CORRESPONDING LOCATION
END

Fig.14

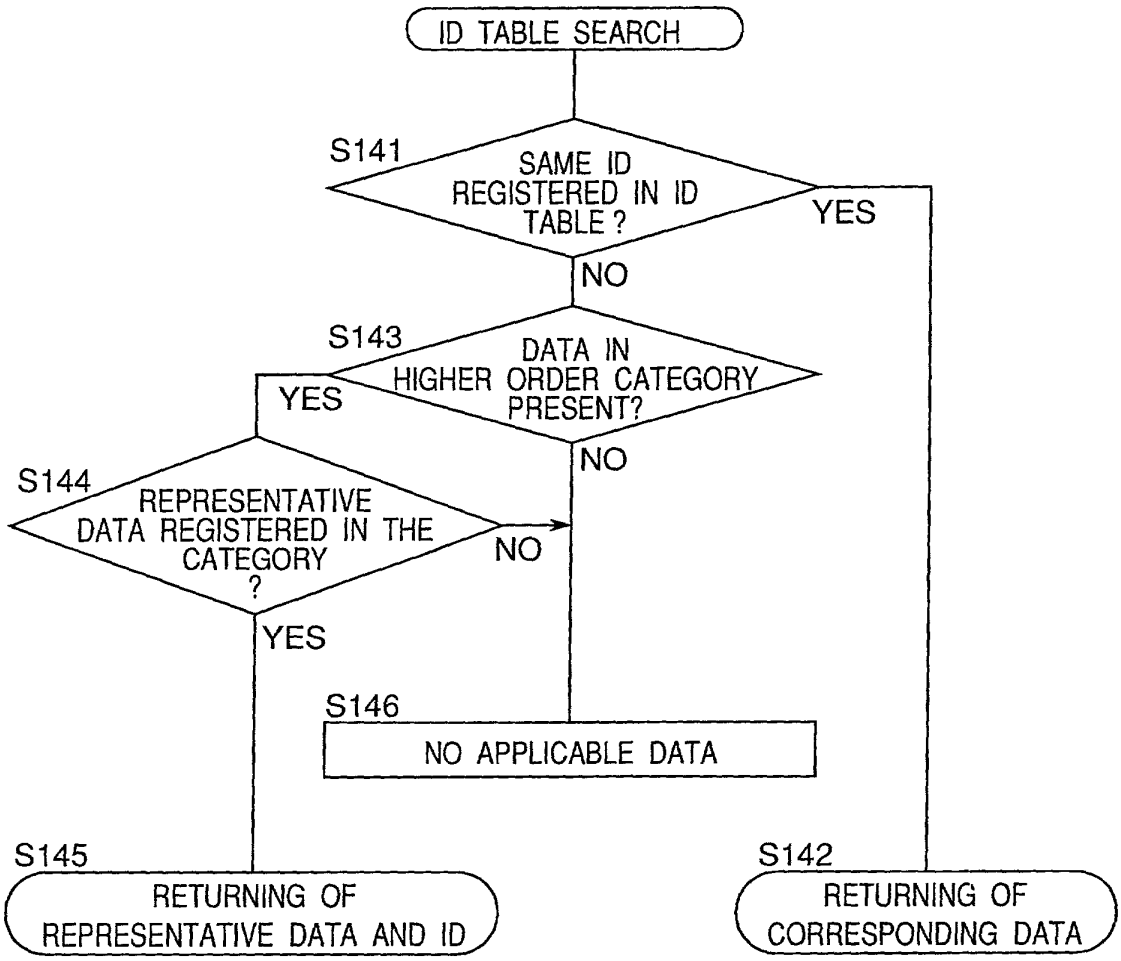

ID TABLE SEARCH
S141
SAME ID REGISTERED IN ID TABLE ?
YES
NO
S143
DATA IN HIGHER ORDER CATEGORY PRESENT?
YES
NO
S144
REPRESENTATIVE DATA REGISTERED IN THE CATEGORY ?
NO
YES
S146
NO APPLICABLE DATA
S145
RETURNING OF REPRESENTATIVE DATA AND ID
S142
RETURNING OF CORRESPONDING DATA

Fig.15

```
From : Takashi Ishitani <foo@xxx.co.jp>
Subject : NOTICE OF PARTY
Content-Type : multipart/related ; boundary=" -----=1234567890="

-----=1234567890=
Content-Type : text/html

<HTML>
<TITLE>NOTICE OF PARTY</TITLE>
<IMG SRC=" hello. image" ID=" 101011" >
<p>
WE ARE GOING TO HAVE A PARTY AS FOLLOWS. EVERYBODY IS WELCOME.<br>
. . .
<A HREF=" kanpai. au" ID=" 302022" >KANPAI ! (CHEERS ! )</A>
</HTML>

-----=1234567890=
Content-Type : image/gif
Content-Location : hello. image
X-ID : 101011

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Content-Type : audio/basic
Content-Location : kanpai. au
X-ID : 302022

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